

connected with the funeral. And the widow herself lives there with the children. I frequently find them all together in a small room with a large fire."

It is not surprising that Chadwick was fierce in his official denunciations, or, because he was so outspoken and ordered people about, that he had to leave the public service.

Simon's scientific training and his experience as the first medical officer of health of the City of London "gave him a professional authority which Chadwick lacked; he could be and was quite as bitter . . . in condemnation of peccant local authorities, but had much more worldly wisdom, those he attacked rarely had powerful friends." But of the three men Chadwick, in the author's opinion, had greater influence as a pioneer than either Farr or Simon, for he "did most to shame our grandfathers and great-grandfathers into some sanitary reformation."

Eugenists will turn with most interest to the last chapter, on Florence Nightingale and Francis Galton, but it is too brief to be satisfying; it has also a reference to Karl Pearson, though with almost an apology. Florence Nightingale's claim to be classed among the greatest of pioneers is based on her success in turning "hospital nursing from a trade or a hobby into a profession" not "by rhetoric, but by businesslike organization and ruthless discipline," using all her gifts "of intellect, of social position, and of 'news value.'" Her statistical publications, too, are evidence of ability of an unusual kind in a woman of that day. Another of our own time who in some respects closely resembled her was Eleanor Rathbone.

Galton is placed by Professor Greenwood alongside Farr, both being "among the greatest of bio-statisticians" and, "in the finest sense of the word, researchers." But Farr was poor and became a statistician early in life, while Galton was rich and only made his great contributions to the science after reaching middle age. The reason for this is brought out in a passage quoted from Karl Pearson's *Life and Letters of Francis Galton*. He had a great admiration for his

cousin, Charles Darwin, and under his strong influence he began and continued for many years researches in other fields. However, the ten or twenty years which followed Darwin's death—when he was already in his sixtieth year, and he lived to be nearly ninety—were among the most fruitful of his career, his fertile imagination being more free then to wander where his own taste led him. The example of what he accomplished in these later years should cheer and inspire all, but especially the elderly among us who perhaps are more difficult to move, and need more prodding and encouragement than the young.

D. CARADOG JONES.

SCIENCE AND SOCIETY

Darlington, C. D. *The Conflict of Science and Society* (Conway Memorial Lecture). London, 1948. Watts. Price: cloth, 3s. 6d.; paper, 2s.

THE discoveries of science undermine the habits and beliefs of society and its material basis. Society opposes these changes and does so through the persons of established scientists, and even through the discoverer himself, who may have grave doubts about the publication of revolutionary findings. The history of universities and their scientific departments, no less than of other institutions and governments themselves, shows recurring resistance to new knowledge and new techniques. The exclusion of science from education has meant that the great offices of State have been filled by men trained to despise or ignore the forces which were transforming their society. Using his own methods the genuine man of science is bound to reach conclusions in conflict with the dominant character of his society. A crisis is on us, due to the conflict between the changes inherent in scientific discovery and the requirement of stability inherent in human society. No adjustment is possible unless we break the autonomous continuity of our social organs. Is our situation so easy that we can afford the perennial archaism of our great departments of industry, agriculture and health? Knowing how universities

and ministries, religious systems and political institutions combine to thwart inquiry, we can safeguard ourselves against their actions. On whether we shall do so will depend the survival of our culture.

This is an abstract of Dr. Darlington's argument, which is frankly polemical, and supported by many striking illustrations. It cannot be denied that science has a dynamic effect which is destructive of social stability ; but perhaps it is not altogether a bad thing that society resists such changes. If we are to have government by popular consent, the public must be able to appreciate the nature of the changes that science demands, and the reasons for them ; and popular education takes time. This imposes a delay between the appearance of a discovery and its application which has advantages. It gives time for debate by specialists and the testing of the validity or the value of the discovery. Not until the majority of experts are convinced can we expect universities and government departments to take administrative action, or the public to approve. In opposition to Dr. Darlington it might be argued that we look on science with an unscientific reverence, as if it were some form of magic, and that our present failing is to demand the premature application of half-baked theories, whose merit is to have been proclaimed by scientists in the face of common sense. Part of the troubles of our present planned economy are, in the opinion of some experts, due to the application of so-called scientific methods which have proved, at the cost of an experiment on a national scale, not to be scientific at all. *Fiat experimentum in corpore vili.*

Science does not tell us this or that, it is the scientists who do the telling. When they are on their favourite subject they are likely to speak with a certainty which the facts do not justify ; and on the whole the thwarted discoverer, whose frustration Dr. Darlington has deplored, tends to be rather more emotionally biased than the well-established and fossilized independent expert.

In the present ordering of society the application of scientific discovery is probably rapid enough for healthy development at

less than explosive speed. But the argument for inertia cannot so easily be used against the freedom of scientific inquiry, against the desirability of a universal scientific education, or against the deliberately cool-headed use of scientific method to investigate any problem which can be stated in a precise form, however loaded with emotion or obscured by dogma. ELIOT SLATER.

HOUSING

Block, Alexander. *Estimating Housing Needs.* London, 1946. The Architectural Press. Pp. 128. Price 10s. 6d.

ALEXANDER BLOCK'S book is a welcome addition to the literature both on housing and population. To estimate housing needs has become only fairly recently a major problem. It was rather an academic question when building activities were largely left to free enterprise and a balance of demand and supply was brought about by the free play of the market. As long as the population continued to grow fast the risk of malinvestment for the private entrepreneur or for the national economy was not heavy. An oversupply of houses or certain types of houses, it was held, could be only a temporary phenomenon. It was bound to be followed by a decline in new building and the growing population would absorb the surplus gradually. On the other hand, a rising demand was expected to be met by an increase in private building. As Mr. Block points out, planning and the prospect of a stationary or declining population are the two main factors which require a careful assessment of present and future housing needs.

The author distinguishes between three aspects of his problem : " the demographic or biological aspect, the social economic aspect and finally the political aspect." The present volume deals with the demographic factor, but a discussion of internal migration and the resulting local variations in housing conditions and needs will be left to a second volume. He refrains wisely from offering a ready-made formula for the estimate of